Sludge Incineration and Precipitant Recovery

Volume I

Research Report No. 31

'D
'70
258
58
976

arch Program for the Abatement of Municipal Pollution under Provisions of the Canada-Ontario Agreement on Great Lakes Water Quality

CANADA-ONTARIO AGREEMENT

RESEARCH REPORTS

These RESEARCH REPORTS describe the results of investigations funded under the Research Program for the Abatement of Municipal Pollution within the Provisions of the Canada-Ontario Agreement on Great Lakes Water Quality. They provide a central source of information on the studies carried out in this program through in-house projects by both Environment Canada and the Ontario Ministry of the Environment, and contracts with municipalities, research institutions and industrial organizations.

Enquiries pertaining to the Canada-Ontario Agreement RESEARCH PROGRAM should be directed to -

Wastewater Technology Centre,
Canada Centre for Inland Waters,
Environment Canada,
P.O. Box 5050,
Burlington, Ontario L7R 4A6

Ontario Ministry of the Environment,
Pollution Control Branch,
135 St. Clair Avenue West,
Toronto, Ontario M4V 1P5

TD
770
.P58
S58
1976

Sludge incineration and
precipitant recovery : volume I,
a selective coded bibliography /
Plummer, Derek.

78875

LIBRARY
MUNICIPAL & PRIVATE SEC.
POLLUTION CONTROL BRANCH

SLUDGE INCINERATION AND PRECIPITANT RECOVERY

VOLUME I

A Selective Coded Bibliography

by

Derek Plummer
Wastewater Technology Centre
Environmental Protection Service
ENIVRONMENT CANADA

RESEARCH PROGRAM FOR THE ABATEMENT
OF MUNICIPAL POLLUTION WITHIN THE
PROVISIONS OF THE CANADA-ONTARIO
AGREEMENT ON GREAT LAKES WATER QUALITY

Project No. 72-3-4

February, 1976

This document may be obtained from -

Training and Technology Transfer
Division (Water)
Environmental Protection Service
Environment Canada
Ottawa, Ontario K1A OH3

Ontario Ministry of the Environment
Pollution Control Branch
135 St. Clair Avenue West
Toronto, Ontario M4V 1P5

Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact Service Ontario Publications at copyright@ontario.ca

Information Canada
Cat. No. En43-11/31

11KT.KE204-5-CA049 — Donald F. Runge Limited, Pembroke, Ont.

ABSTRACT

Incineration has been a popular method of ultimate disposal of sewage sludges for many years. With the recent implementation of chemical phosphorus removal programs at municipal wastewater treatment plants, interest has developed in the recovery and recycle of the chemical precipitants (alum, iron, and lime) from incinerated sludge ash.

The Wastewater Technology Centre of the Environmental Protection Service initiated a "Sludge Incineration and Precipitant Recovery Program" in 1972. An extensive review of the related significant English language literature from the period 1968 to 1974 was performed as part of this program and is summarized in this bibliography.

RÉSUMÉ

L'incinération a été durant de nombreuses années une méthode en vogue pour l'élimination définitive des boues résiduaires. La mise en oeuvre récente de programmes d'élimination du phosphore, par voie chimique, dans les usines municipales d'épuration des eaux usées a suscité un certain intérêt pour la récupération et le recyclage des adjuvants chimiques de précipitation (alun, fer, chaux) contenus dans les cendres des boues incinérées.

Le Centre technique des eaux usées du Service de la protection de l'environnement a inauguré en 1972 un programme d'incinération des boues et de récupération des adjuvants de précipitation. Une vaste étude bibliographique des publications pertinentes de langue anglaise, publiées entre 1968 et 1974, a été effectuée dans le cadre de ce programme et est résumée dans le présent rapport.

TABLE OF CONTENTS

		Page
ABSTRACT		i
TABLE OF CONTENTS		iii
	List of Tables	iv
1.	INTRODUCTION	1
2.	SUBJECT INDEX	2
3.	BIBLIOGRAPHY	14
ACKNOWLEDGEMENTS		31

LIST OF TABLES

Table		Page
1	Sludge Conditioning, Dewatering and Disposal	3
2	Combustion Theory	4
3	Design and Operation	5
4	Fluidized Bed Incinerator	6
5	Multiple-Hearth Incinerator	7
6	Rotary Kiln	8
7	Process Characteristics	9
8	Precipitant Recovery	10
9	Miscellaneous	11
10	Comparisons of Different Processes	12
11	Reviews of Several Processes	13

1. INTRODUCTION

Incineration has been a popular method for ultimate disposal of sewage sludges for many years. More recently, with the implementation of chemical phosphorus removal programs at municipal wastewater treatment plants, interest has developed in recovery and recycle of the chemical precipitants (alum, iron and lime) from the incinerated sludge ash. In 1972, the Wastewater Technology Centre of the Environmental Protection Service initiated a "Sludge Incineration and Precipitant Recovery Program". This program is continuing with major funding provided under the Canada-Ontario Agreement on Great Lakes Water Quality. An extensive review of the related literature was performed as part of this program and is presented herein.

This bibliography summarizes a large portion of the significant English language literature from the period 1968 to 1974. It also includes earlier prominent literature. The papers, reports, or books cited herein have been reviewed, categorized according to the various aspects of incineration, and systematically coded. The categories used, with coding abbreviations in parentheses, include:

Sludge Conditioning, Dewatering and Disposal (SC)
Combustion Theory (CT)
Design and Operation (DO)
Fluidized Bed Incinerator (FB)
Multiple-Hearth Incinerator (MH)
Rotary Kiln (RK)
Process Characteristics (including Ash, Sludge, Emissions, Effluents) (PC)
Precipitant Recovery (including Chemical Reactivation) (PR)
Miscellaneous (including Fuel Classification, Spray Drying, Wet Air Oxidation, etc.) (MI)

When different processes are compared, or when several processes are reviewed in a single reference, the respective codings used are (CO) and (RE).

The references are coded at a secondary level with respect to the scale of the study. For example, a laboratory bench scale or

mathematical investigation is coded as (M), pilot plant as (P), full scale as (F), and laboratory analysis technique and description as (L).

Where applicable, the references are categorized according to the type of data presented. For example, design data are coded as (D), operating data as (O), and process cost data (operating and/or capital costs) as (C).

The following example illustrates the use of the coding system:

"Sewage sludge incineration". Washington: Environmental Protection Agency, Report EPA-R2-72-040, Aug., 1972. 89p. (National Technical Information Service, PB 211 323)	MH,FB,PC F D,O

The reference cited above contains information on Multiple Hearth Incinerators, Fluidized Bed Incinerators, and Process Characteristics. The material is based on full scale study and contains design and operating data.

2. SUBJECT INDEX

The following tables list references found in the bibliography according to the nine subject categories given above. Separate index tables are also provided for references in which different processes have been compared and where several processes have been reviewed in a single reference.

The references are indexed numerically and are listed in columns using the last digit of each number as a guide, so that comparisons between tables for cross-reference purposes can readily be made.

TABLE 1. SLUDGE CONDITIONING, DEWATERING AND DISPOSAL (SC)

1	2	3	4	5	6	7	8	9	0
1	12	23	54	55	126	57	48	39	30
21	52	53	74	165		117	58	49	50
151	102	73	114	175		127	138	129	170
171		113	184			167		159	
		123				187			
		133							
		163							
		173							

TABLE 2. COMBUSTION THEORY (CT)

1	2	3	4	5	6	7	8	9	0
21	182	63	24	65	6	97	68	119	100
51		73	64	95	96		108	139	120
101		93	74	115	166		138	169	130
131		133	94	125					150
				155					190

TABLE 3. DESIGN AND OPERATION (DO)

1	2	3	4	5	6	7	8	9	0
21	22	3	4	15	36	27	48	9	10
41	122	13	34	35	126	37	58	19	50
91	162	103	114	75		137	98	99	80
111	172	153	124	125		147	118	159	
121	182	173	164			187	128		
141		193	174				148		
161							158		
191							188		

TABLE 4. FLUIDIZED BED INCINERATOR (FB)

1	2	3	4	5	6	7	8	9	0
21	2	3	4	25	16	37	108	19	10
31	22	103	104	175	26	87	158	59	20
41	32	113	114			107		179	30
61	42		154			147			40
171	72		184						60
	82								70
	112								
	132								
	152								
	192								

TABLE 5. MULTIPLE-HEARTH INCINERATOR (MH)

1	2	3	4	5	6	7	8	9	0
21	32	13	34	5	16	17	18	49	30
31	82	113	104	15	36	37	48	129	50
61	132	153	124	25	126	87	58	149	70
111	152	173	174	35		127	148	159	80
151	172		184	125		137			110
171	182			175		157			
	192					167			
						187			

TABLE 6. ROTARY KILN (RK)

1	2	3	4	5	6	7	8	9	0
21	82		184	105		37	38	79	10
31	192			175		47	98	99	
171						87	188		
						157			

TABLE 7. PROCESS CHARACTERISTICS (PC)
(includes Ash, Sludge, Emissions, Effluents)

1	2	3	4	5	6	7	8	9	0
1	12	43	34	35	16	7	8	9	90
51	22	103	44	45	26	27	18	29	110
81	62	113	84	85	46	37	48	69	140
91	92	123	94	95	66	67	78	79	150
121	102	133	134	145	76	77	88	89	160
141	142	143	144	155	96	97	118	109	180
161		183		185	106	117	158	119	
181					156	187	168	159	
191							178	179	
								189	

TABLE 8. PRECIPITANT RECOVERY (PR)
(includes Chemical Reactivation)

1	2	3	4	5	6	7	8	9	0
71	2		104	165	126	7	8	9	10
151	152				156	17	48	49	40
					176	117	58	149	50
					186	147	188	159	
						157			
						177			

TABLE 9. MISCELLANEOUS (MI)
(includes Fuel Classification, Spray Drying, Wet Air Oxidation, etc.)

1	2	3	4	5	6	7	8	9	0
1	2	23	14	25	56	7	28	9	10
11	12	33	54	55	76	37	38	39	30
21	52	53	64	85	86	47	68	49	40
31	92	73	74	95	96	57	118	79	70
61	102	83	94	105	116	87	128	89	120
71	122	113	104	135	136	97		129	170
121	132	123	164	165	146	107		169	
151	142	133	184	175	156	167			
	162	163							
	192								

TABLE 10. COMPARISONS OF DIFFERENT PROCESSES (CO)

1	2	3	4	5	6	7	8	9	0
31	82			185	66	7	118	129	150
161						27			
						67			
						187			

TABLE 11. REVIEWS OF SEVERAL PROCESSES (RE)

1	2	3	4	5	6	7	8	9	0
1	12	53	54	25	56	37			30
11	52	163	104	55		57			40
21	132	183	184	75		87			70
61	152	193		175		107			
151						157			
171						167			

3. BIBLIOGRAPHY

1	Ainsworth, G., "Sludge treatment - the current trends". Process Biochemistry, 8:1, 11-14, 1973	SC,MI,PC RE,F
2	Albertson, O.E. & Sherwood, R.J., "Phosphate extraction process". JWPCF, 41:8, Part 1, 1467-1490, 1969	SC,FB,MI, PR L,F D,O,C
3	Alford, J.M., "Sludge disposal experiences at North Little Rock, Arkansas". JWPCF, 41:2, Part 1, 175-183, 1969	FB,DO,SC F D,O
4	American Oil Company, Mandan, North Dakota, "Fluid bed incineration of petroleum refinery wastes". Washington: Environmental Protection Agency, March, 1971. (U.S. E.P.A. Water Pollution Control Research Series, 12050 EKT 03/71). 113 p.	FB,DO F D,O
5	Anon., "Canada's largest sludge incinerators fired up and running". Water and Pollution Control (Canada), 107:1, 20-24, 1969	MH F O
6	Anon., "Combustion and emission phenomena in incinerators". See second page of Contents, Proc. 1970 National Incinerator Conference. New York: ASME. 1970	CT M,P O
7	Anon., "Containing the flow of sewage sludge". Environmental Science, 8:8, 702-703, 1974	MI,PC,PR F,CO C
8	Anon., "Disposal of wastes from water treatment plants - part 1" JAWWA, 61:10, 541-566, 1969	MI,SC,PR, PC F,P,M
9	Anon., "Disposal of wastes from water treatment plants - part 2". JAWWA, 61:11, 619-638, 1969	MI,SC,DO, PC,PR F
10	Anon., "Disposal of wastes from water treatment plants - part 3". JAWWA, 61:12, 681-708, 1969	MI,SC,PR, RK,FB,DO F,M C,D,O
11	Anon., "Disposal of wastes from water treatment plants - part 4". JAWWA, 62:1, 63-70, 1970	MI RE
12	Anon., "Disposal of water treatment plant wastes". JAWWA, 64:12, 814-820, 1972	MI,SC,PC RE,F
13	Anon., "New incinerator at Milton Keynes". Pollution Technology International, 6, 99-100, 1972	MH,DO F

14	Anon., "Pollutants are all burned up". Water and Wastes Engineering, 10:3, B-7, 1973	MI F
15	Anon., "Sewage sludge burned without smoke or odour". Public Works, 102:10, 72-74, 1971	MH,DO F O
16	Anon., "Sewage sludge incineration". Washington: Environmental Protection Agency, Report EPA-R2-72-046, Aug., 1972, 89p (National Technical Information Service, PB 211323)	MH,FB,PC F D,O
17	Anon., "Sludge disposal and lime reclamation system". Water & Sewage Works, 120:9, 88, 1973	MH,PR F
18	Anon., "Sludge furnace eliminates PCB residuals". Water & Sewage Works, 119:12, 80, 1972	MH,PC P
19	Bailie, R.C., "Solid waste incineration in fluidized beds". Industrial Water Engineering, 7:11, 22-25, 1970	FB,DO
20	Bailie, R.C., Donner, D.M., & Galli, A.F., "Potential advantages of incineration in fluidized beds". Proc. 1968 National Incinerator Conference, New York: ASME. 12-17, 1968	FB P O
21	Balakrishnan, S., Williamson, D.E., & Okey, R.W., "State-of-the-art review on sludge incineration practice". Washington: Environmental Protection Agency, April, 1970. (U.S. E.P.A. Water Pollution Control Research Series, 17070 DIV 04/71). 135 p.	DO,SC,CT,MH, FB,RK,MI RE,F D,O,C
22	Batelle Laboratories, Columbus, Ohio, "Fluidized-bed incineration of selected carbonaceous industrial wastes". Washington: Environmental Protection Agency, March, 1972. (U.S. E.P.A. Water Pollution Control Research Series, 12120 FYF 03/72.) 88 p.	FB,PC,DO P D,O
23	Bennett, E.R., Rein, D.A. & Linstedt, K.D., "Economic aspects of sludge dewatering and disposal". American Society of Civil Engineers, Proceedings. Environmental Engineering Division, Journal. 99: EE1, 55-72, 1973	SC,MI L,M,F C
24	Biswas, B.K., Kuo, T.J. & Essenhigh, R.H., "Combustion and emission phenomena in incinerators: Studies on combustion behaviour and extinction limits of smoke flames". Proc. 1970 National Incinerator Conference, New York: ASME. 304-313, 1970	CT M O
25	Bjorkman, A., "Thermal treatment of sewage sludge". Schweizerische Zeitschrift fuer Hydrologie, 31:2, 680-686, 1969	MH,FB,MI RE
26	Blanc, H. & Maulaz, M., "Sludge press cake incineration in a Fluosolid Oven". Proc. 1970 National Incinerator Conference, New York: ASME. 107-115, 1970	FB,PC F O,C

27	Bowen, I.G. & Brealey, L., "Incinerator ash - criteria of performance". Proc. 1968 National Incinerator Conference. New York: ASME. 18-22, 1968	PC,DO CO,F
28	Brinkerhoff, R.J., "Inventory of intermediate-size incinerators in the United States - 1972". Pollution Engineering, Nov., 33-38, 1973	MI
29	Burckle, J.O., Dorsey, J.A. & Riley, B.T., "The effects of the operating variables and refuse type on the emissions from a pilot-scale trench incinerator". Proc. 1968 National Incinerator Conference. New York: ASME. 34-41, 1968	PC P O
30	Burd, R.S., "A study of sludge handling and disposal". Cincinnati: Federal Water Pollution Control Administration, Water Pollution Control Research Series Publication No. WP-20-4, 247-303, May 1968	SC,MH,FB,MI RE,F O,C
31	Burgess, J.V., "Comparison of sludge incineration processes". Process Biochemistry, 3: July, 27-30, 1968	FB,MH,RK, MI CO,F
32	Burgess, J.V., "Developments in sludge and waste incineration". Process Biochemistry, 8:1, 27-28, 1973	MH,FB F
33	Cameron, M.S., "New incineration method solves grease problem in Richmond, Pa." Water & Sewage Works, 120:9, 116-119, 1973	MI F O
34	Cardinal, P.J., Jr., "Advances in multi-hearth incineration". Process Biochemistry, 6:1, 27-31, 1971	MH,DO,PC F O,C
35	Cardinal, P.J., Jr., "Multiple hearth incineration". Water and Waste Treatment, 12: July/Aug., 62-67, 1968	MH,DO,PC F O,C
36	Cardinal, P.J., Jr., & Sebastian, F.P., "Operation, control and ambient air quality considerations in modern multiple hearth incinerators". Proc. 1972 National Incinerator Conference. New York: ASME. 290-299, 1972	MH,DO F D,O
37	Carnes, W.A. & Eller, J.M., "Characterization of wastewater solids". JWPCF, 44:8, 1498-1517, 1972	SC,PC,DO,MH, FB,RK,MI RE,M,P
38	Challis, J.A., "Three industrial incineration problems". Proc. 1966 National Incinerator Conference. New York: ASME. 208-218, 1966	MI,RK F D,O

39	Chung, S.K. & Bhagat, S.K., "Wastewater treatment properties of Fe(II) and Fe(III) compounds". Water & Sewage Works, 120:2, 54-58, 1973	MI,SC M,L
40	Collins, T.T., Jr. & Shick, P.E., "Pyrolysis, fluidized bed and other special combustion processes". Paper Trade Journal, 153:35, 36-44, 1969	FB,MI,PR RE,F
41	Copeland, G.C., "Design and operation of fluidized bed incinerators". Water & Sewage Works, 117: Reference No., R245-R249, 1970	FB,DO F
42	Copeland, G.C., "The Copeland Process fluid bed system & pollution control worldwide". 24th Industrial Waste Conference, Purdue University. Proceedings. Lafayette, Indiana. 1017-1023, 1969	FB F D
43	Criss, G.H. & Olsen, A.R., "Further investigation of refractory compatibilities with selected incinerator slags". Proc. 1968 National Incinerator Conference. New York: ASME. 61-68, 1968	PC F,L
44	Criss, G.H. & Olsen, A.R., "The chemistry of incinerator slags and their compatibility with fireclay and high alumina refractories". Proc. 1968 National Incinerator Conference. New York: ASME. 53-60, 1968	PC F,L
45	Cross, F.L., Jr., Drago, R.J., & Francis, H.E., "Metal and particulate emissions from incinerators burning sewage sludge and mixed refuse". Proc. 1970 National Incinerator Conference. New York: ASME. 189-195, 1970	PC F O
46	Cross, F.L., Jr. & Ross, R.W., "Effluent water from incinerator flue-gas scrubbers". Proc. 1968 National Incinerator Conference. New York: ASME. 69-72, 1968	PC F,L
47	Crow, W.B., "Calcination techniques". JAWWA, 52:3, 322-326, 1960	RK,MI F O
48	Culp, R.L. & Culp, G.L., "Advanced wastewater treatment". New York: Van Nostrand Reinhold Co., 310 p, 1971	SC,MH,DO,PC, PR F,L D,O,C
49	Dean, R.B., "Disposal to the environment". In Waste Disposal from Water and Wastewater Treatment Processes. Proceedings. (10th Sanitary Engineering Conference) University of Illinois, Urbana. 87-98, 1968	MI,SC,PR, MH F

50	Dept. of Public Utilities, Gainesville, Florida, "Magnesium carbonate, a recycled coagulant for water treatment". Washington: Environmental Protection Agency, June, 1971. (U.S. E.P.A. Water Pollution Control Research Series, 12120 ESW 06/71). 106 p.	PR,SC,MH, DO L,M D,O,C
51	Dervay, J.R., II, Liu, H., & Theoclitus, G., "An evaluation of current incinerator emission standards". Proc. 1972 National Incinerator Conference. New York: ASME. 111-119, 1972	CT,PC M
52	Dick, R.I., "Sludge treatment, disposal, and utilization". JWPCF 41:6, 934-949, 1969	MI,SC RE
53	Dick, R.I., "Sludge treatment, disposal, and utilization". JWPCF, 42:6, 934-949, 1970	MI,SC RE
54	Dick, R.I., "Sludge treatment, disposal, and utilization". JWPCF, 43:6, 1134-1149, 1971	MI,SC RE
55	Dick, R.I., "Sludge treatment, utilization, and disposal". JWPCF, 44:6, 959-972, 1972	MI,SC RE
56	Dick, R.I., "Sludge treatment, utilization, and disposal". JWPCF, 45:6, 1075-1088, 1973	MI,SC RE
57	Dick, R.I., "Sludge treatment, utilization, and disposal". JWPCF, 46:6, 1161-1181, 1974	MI,SC RE
58	Doyle, C.L., "Use of sludge incinerator ash to improve vacuum filtration". Paper read at WPCF Conference, October 1974, Denver. Mimeographed.	SC,DO,PR,MH F O
59	Ducar, G.J. & Levin, P., "Mathematical model of recalcination of lime sludge with fluidized bed reactors". Washington: Environmental Protection Agency, September, 1970. (U.S. E.P.A. Water Pollution Control Research Series, 17090 EHQ 09/70). 49 p.	FB M,F D,O,C
60	Ducar, G.J. & Levin, P., "Mathematical model of sewage sludge fluidized bed incinerator capacities and costs". Cincinnati: Federal Water Pollution Control Administration, Report TWRC-10, Sept., 1969. 72 p. (National Technical Information Service, PB 189295)	FB M,F D,O,C
61	Eberhardt, H., "European practice in refuse and sewage sludge disposal by incineration". Proc. 1966 National Incinerator Conference. New York: ASME. 124-143, 1966	MI,MH,FB RE,F
62	Edwards, L.V., "Smoke density measurement in municipal incinerators". Proc. 1966 National Incinerator Conference. New York: ASME. 183-186, 1966	PC M,F

63	Essenhigh, R.H., "Burning rates in incinerators. Part 1: A simple relation between total, volumetric, and area firing rates. Part 11: The influence of moisture on the combustion intensity". Proc. 1968 National Incinerator Conference. New York: ASME. 87-100, 1968	CT M
64	Essenhigh, R.H., "Incineration - a practical and scientific approach". Environmental Science and Technology, 2:7, 524-534, 1968	CT,MI P,L,M
65	Essenhigh, R.H. & Kuo, T.J., "Combustion and emission phenomena in incinerators: Development of physical and mathematical models of incinerators, Part 1: Statement of the problem". Proc. 1970 National Incinerator Conference. New York: ASME. 261-271, 1970	CT M
66	Fernandes, J.H., "Incinerator air pollution control". Proc. 1968 National Incinerator Conference. New York: ASME. 101-116, 1968	PC CO,F C
67	Fife, J.E. & Boyer, R.H., Jr., "What price incineration air pollution control?". Proc. 1966 National Incinerator Conference. New York: ASME. 89-96, 1966	PC CO,F C
68	Fisher, W.J. & Swanwick, J.D., "High-temperature treatment of sewage sludges". Water Pollution Control, 70:4, 355-373, 1971	CT,MI L,M,P O
69	Forster, C.F., "Sludge - waste or raw material?" Effluent & Water Treatment Journal, 13:11, 697-699, 1973	PC
70	Frankel, J.I., "Incineration of process wastes" Industrial Water Engineering, 6:4, 18-20, 1969	MH,FB,MI RE,F
71	Fulton, G.P., "Alum recovery for filtration plant waste treatment". Water and Wastes Engineering, 7:6, 78-81, 1970	PR,MI F D
72	Gaillard, J.R., "Fluidized bed incineration of sewage sludge". Water Pollution Control, 72:2, 190-194, 1973	FB F O,C
73	Gale, R.S., "Mechanical dewatering and incineration of sewage Sludges". Abwassertechnische Vereinigung. Berichte, No. 23, 191-206, 1969	SC,CT,MI F O
74	Gale, R.S., "The sludge treatment and disposal problem". In Incineration of Refuse & Sludge. Helliwell, P.R., Ed. Southampton: Southampton University Press. 1.1 - 1.13, 1972	SC,CT,MI RE

75	Garrett, C.J., "Incineration control". Industrial Water Engineering, 7:7, 35-39, 1970	DO RE
76	Gilardi, E.F. & Schiff, H.F., "Comparative results of sampling procedures used during testing of prototype air pollution control devices at New York City municipal incinerators". Proc. 1972 National Incinerator Conference. New York: ASME. 102-110, 1972	PC,MI F,L O
77	Gray, D.H., "Properties of compacted sewage ash". American Society of Civil Engineers, Proceedings. Soil Mechanics and Foundations Division, Journal. 96:SM2, 439-451, 1970	PC F,L
78	Gray, D.H. & Penessis, C., "Engineering properties of sludge ash". JWPCF, 44:5, 847-858, 1972	PC F,L O
79	Harkness, N., et al, "Some observations on the incineration of sewage sludge". Water Pollution Control, 71:1, 16-33, 1972	MI,PC,RK M,L,P
80	Harris, S.M., "Incineration - multiple hearth furnaces". Water & Sewage Works, 114:8, 307-312, 1967	MH,DO F C
81	Herbert, D.B., "The nature of incinerator slags". Proc. 1966 National Incinerator Conference. New York: ASME. 191-194, 1966	PC F,L
82	Hescheles, C.A. & Zeid, S.L., "Investigation of three systems to dry and incinerate sludge". Proc. 1972 National Incinerator Conference. New York: ASME. 265-280, 1972	FB,MH,RK CO,F O
83	Hess, K., Leuckel, W., & Minx, E., "Purification of organically contaminated waste water by combustion processes". Translated for CCIW by Secretary of State, Ottawa, 1973. (From German, In Chemie-Ingenieur-Technik, 44:5, 325-332, 1972) 24 p.	MI M,P O
84	Hrudey, S.E. & Perry, R., "Assessment of organic content of incinerator residues". Environmental Science & Technology, 7:13, 1140-1147, 1973	PC L
85	Ishii, K., et al, "High performance incineration of sewage sludge atomizing feeders for dewatered sludge". In Annual North Eastern Regional Anti-pollution Conference, 4th. "Recent developments in industrial pollution control", 45-61, 1971	MI,PC M

86	Ishii, K., et al, "Slag-Tap type sludge incineration". In Annual North Eastern Regional Anti-pollution Conference, 4th. "Recent developments in industrial pollution control", 62-79, 1971	MI M,P D,O
87	James, R.W., "Sewage sludge treatment". Park Ridge, N.J.: Noyes Data Corporation, 117-187, 1972	FB,MI,MH,RK RE,F O
88	Jens, W. & Rehm, F.R., "Municipal incineration and air pollution control". Proc. 1966 National Incinerator Conference. New York: ASME. 74-83, 1966	PC F O
89	Kaiser, E.R., "A new incinerator control meter is needed". Proc. 1966 National Incinerator Conference. New York: ASME. 176-187, 1966	PC,MI L O
90	Kaiser, E.R., "Chemical analyses of refuse components". Proc. 1966 National Incinerator Conference. New York: ASME. 84-88, 1966	PC L,F O
91	Kaiser, E.R. & Trautwein, W.B., "Prevention of fused deposits on incinerator lower side walls". Proc. 1968 National Incinerator Conference. New York: ASME. 136-141, 1968	DO,PC F O
92	Kaiser, E.R., Zeit, C.D., & McCaffery, J.B., "Municipal incinerator refuse and residue". Proc. 1968 National Incinerator Conference. New York: ASME. 142-153, 1968	MI,PC F O
93	Kalika, P.W., "Influence coefficients to relate municipal refuse variations to incinerator design". Proc. 1968 National Incinerator Conference. New York: ASME. 154-170, 1968	CT M
94	Kempa, E.S., "An attempt at a classification of wastewater sludges as fuels". Translated for CCIW by Secretary of State, Ottawa, 1973. (From Czechoslovak, In Brno. Vysoke Uceni Technicke. Sbornik, V3-4, 613-623, 1967) 19 p.	MI,PC,CT M,L
95	Kempa, E.S., "An attempted classification of the combustion properties of sewage sludges". Translated for CCIW by Secretary of State, Ottawa, 1973. (From German, In Fortschritte der Wasser-Chemie und ihrer Grenzgebiete, No. 7, 160-180, 1967) 28 p.	MI,PC,CT M,L
96	Kempa, E.S., "Combustion characteristics of industrial sludges". Translated for CCIW by Secretary of State, Ottawa, 1973. (From German, In Brennstoff, Wärme, Kraft, 21:9, 461-467, 1969) 24 p.	MI,PC,CT M,L

97	Kempa, E.S., "Combustion heat of sewage sludge". Translated for CCIW by Secretary of State, Ottawa, 1973. (From German, In GWF: Das Gas - und Wasserfach, 111:1, 10-15, 1970) 17 p.	MI,CT,PC M
98	Kramm, D.J., "Selection and use of the rotary lime kiln and its auxiliaries - I". Paper Trade Journal, 156:28, 26-32, 1972	RK,DO F D,O
99	Kramm, D.J., "Selection and use of the rotary lime kiln and its auxiliaries - II". Paper Trade Journal, 156:35, 25-31, 1972	RK,DO F
100	Kuo, T.J., et al, "Combustion and emission phenomena in incinerators: Development of physical and mathematical models of incinerators, Part II: Initial testing of a real system". Proc. 1970 National Incinerator Conference. New York: ASME. 327-330, 1970	CT P O
101	Kuwata, M., Kuo, T.J., & Essenhigh, R.H., "Combustion and emission phenomena in incinerators: Burning rates and operational limits in a solid-fuel bed". Proc. 1970 National Incinerator Conference. New York: ASME. 272-287, 1970	CT M
102	Levin, P., "Disposal systems and characteristics of solid wastes generated at wastewater treatment plants". In Waste Disposal from Water and Wastewater Treatment Processes Proceedings. (10th Sanitary Engineering Conference), University of Illinois, Urbana. 21-32, 1968	SC,MI,PC F
103	Liao, B., "Design method for fluidized bed sewage sludge incinerators". Ph.D. Thesis. Seattle, University of Washington, 1972. (University Microfilms, No. 72-20, 876)	FB,DO,PC P,F,L,M D
104	Licata, A., Kurtz, A.J., & Govan, F.A., "Disposal of liquid industrial waste by controlled incineration". In Mid-Atlantic Industrial Waste Conference. Proceedings. Rasmussen, G.P., Ed. 123-131, 1970	RK,MI P
105	Loven, A.W., "Perspectives on carbon regeneration". Chemical Engineering Progress, 69:11, 56-62, 1973	PR,MH,FB,MI RE,F C
106	Marshalla, A., Crawford, G., & Nolan, M., "Conversion factors for source emission measurements of incinerator flue gases". Proc. 1968 National Incinerator Conference. New York: ASME. 176-179, 1968	PC M,L
107	Marson, H.W., "The disposal of sewage sludge by combustion with special reference to fluidization methods". Journal and Proc. of the Institute of Sewage Purification, London, 320-331, 1965	FB,MI RE,F

108	Masaru, I. & Takashi, S., "Incineration of chicken droppings in a fluidized-bed device". Kagaku Kogaku, 32:5, 459-464, 1968. (Translated by United States National Translation Centre, TR-154-73, 73-11008-13B)	FB,CT P,L,M
109	Matusky, F.E. & Hampton, R.K., "Incinerator wastewater". Proc. 1968 National Incinerator Conference. New York: ASME. 198-203, 1968	PC F,L
110	McAteer, D.J., "Incineration of Sewage Sludge". Process Biochemistry, 3:4, 60-62, 1968	MH,PC
111	McCarthy, J., "Dewatering - incineration decrease pollution in St. Louis". Water & Sewage Works, 119:4, 66-68, 1972	MH,DO F
112	McGill, D.L. & Smith, E.M., "Fluidized bed disposal of secondary sludge high in inorganic salts". Proc. 1970 National Incinerator Conference. New York: ASME. 79-85, 1970	FB P O
113	Middleton, F.M. & Stenburg, R.L., "Research needs for advanced waste treatment". American Society of Civil Engineers, Proceedings. Sanitary Engineering Division, Journal. 98:SA3, 515-528, 1972	SC,MI,MH, FB,PC F
114	Miller, R.L. & Winefordner, J.D., "Calculation of excess air for combustion processes using O_2-to-N_2 ratio". Environmental Science & Technology, 5:5, 444-445, 1971	CT L
115	Millward, R.S. & Booth, P.B., "Incorporating sludge combustion into sewage treatment plants". Water & Sewage Works 115: Reference No., 169-171, 173-174, 1968	DO,FB,SC F O
116	Monroe, E.S., Jr., "The incineration of aqueous wastes". Proc. 1968 National Incinerator Conference. New York: ASME. 204-210, 1968	MI F D,O
117	Mulbarger, M.C., et al, "Lime clarification, recovery, reuse and sludge dewatering characteristics". JWPCF, 41:12, 2070-2085, 1969	SC,PR,PC L,M O
118	Nickerson, R.D., "Sludge Drying and Incineration". JWPCF, 32:1, 90-98, 1960	DO,MI,PC CO,F C
119	Niessen, W.R. & Sarofim, A.F., "Incinerator air pollution: facts and speculation". Proc. 1970 National Incinerator Conference. New York: ASME. 167-181, 1970	PC,CT F,M O
120	Niessen, W.R., et al, "An approach to incinerator combustible pollutant control". Proc. 1972 National Incinerator Conference. New York: ASME. 245-259, 1972	CT,MI F,M

121	Nolan, E.J. & Kuchar, N.R., "An atomized spray vortex incinerator for burning dilute sludge". Proc. 1972 National Incinerator Conference. New York: ASME. 281-289, 1972	MI,PC,DO F D
122	Norwark, H.R., "The measurement of air and gas flow and pressure as applied to modern municipal incinerators". Proc. 1966 National Incinerator Conference. New York: ASME. 171-175, 1966	DO,MI F,L
123	Olexsey, R.A. & Farrell, J.B., "Sludge incineration and fuel conservation". U.S. E.P.A. News of Environmental Research in Cincinnati, Advanced Waste Treatment, May 3, 1974. 4 p.	SC,PC,MI F C,O
124	Owen, M.B., "Sewage solids combustion". Water & Sewage Works, 106: Oct., 442-447, 1959	MH,DO F D,O
125	Owen, M.B., "Sludge incineration". American Society of Civil Engineers, Proceedings. Sanitary Engineering Division, Journal. 83:SA1, Paper 1172, 27 p., 1957	MH,DO,CT F D,O
126	Parker, D.S., Niles, D.G., & Zadick, F.J., "Processing of combined physical-chemical-biological sludges". JWPCF, 46:10, 2281-2300, 1974	PR,SC,MH,DO F,P D,O
127	Parker, D.S., Zadick, F.J., & Train, K.E., "Sludge processing for combined physical-chemical biological sludges". Washington: Environmental Protection Agency, March, 1973. (U.S. E.P.A. Technology Series Report EPA-R2-73-250; National Technical Information Service PB 223341; Government Printing Office Sup. Doc. EP 1.23/2:73-250)	SC,MH P D,O,C
128	Pradt, L.A., "Developments in wet air oxidation". Chemical Engineering Progress, 68:12, 72-77, 1972	MI,DO F
129	Quirk, T.P., "Economic aspects of incineration versus incineration-drying". In Sludge Concentration, Filtration & Incineration, Continued Education Series No. 113, Univ. of Michigan School of Public Health, Ann Arbor. 158-176, 1963	MI,MH,SC CO,F C
130	Rao, S.T.R., Kuo, T.J., & Essenhigh, R.H., "Combustion and emission phenomena in incinerators: Characterization of stirring factors by cold-model simulation". Proc. 1970 National Incinerator Conference. New York: ASME. 314-326, 1970	CT M O
131	Rao, T.R.S., Gelernter, G., & Essenhigh, R.H., "Scale up of combustion pot behaviour by dimensional analysis". Proc. 1968 National Incinerator Conference. New York: ASME. 232-236, 1968	CT M

132	Reeve, D.A.D., "Study tour of sewage-treatment installations and research centres in the United States of America, Japan, Switzerland, and Germany". Water Pollution Control, 70:6, 662-667, 1971	MH,FB,MI RE,F
133	Reeve, D.A.D. & Harkness, N., "Some aspects of sludge incineration". Water Pollution Control, 71:6, 618-628, 1972	SC,MI,CT,PC F D
134	Regis, A.J., "X-ray spectrographic analysis of incinerator slags". Proc. 1966 National Incinerator Conference. New York: ASME. 195-198, 1966	PC L,F O
135	Rogers, J.E., "Preliminary report on an experimental incinerator for the study of fuel bed and overfire combustion". Technical Meeting of Eastern States Section of Combustion Institute, Waterloo, Ontario. Aug. 1971, 5 p.	MI M,L
136	Rogers, J.E., Sarofim, A.F., & Howard, J.B., "Effect of underfire air rate on a burning simulated refuse bed". Proc. 1972 National Incinerator Conference. New York: ASME. 135-144, 1972	MI P O
137	Ross, E.E., "Scum incineration experiences". JWPCF, 42:5, Part 1, 733-736, 1970	MH,DO F O
138	Rudolfs, W. & Baumgartner, W.H., "Loss of volatile matter by drying sewage sludge before incineration". Water Works and Sewerage, June, 199-201, 1932	CT,SC L
139	Russell, R.A., "Theory of combustion of sludge". In Sludge Concentration, Filtration, & Incineration, Continued Education Series No.113, University of Michigan School of Public Health, Ann Arbor. 152-157, 1963	CT
140	Sawyer, C.N. & Kahn, P.A., "Temperature requirements for odor destruction in sludge incineration". JWPCF, 32:12, 1274-1278, 1960	PC L,M
141	Schoenberger, R.J., "Characterization of refuse and incinerator residue according to potential environmental interaction and incinerator performance". Ph.D. Thesis. Philadelphia, Drexel Institute of Technology, 1969. (University Microfilms No.69-15, 426)	DO,PC L,M
142	Schoenberger, R.J., "Studies of incinerator operation". Proc. 1972 National Incinerator Conference. New York: ASME. 15-31, 1972	PC,MI F,L O

143	Schoenberger, R.J. & Purdom, P.W., "Classification of incinerator residue". Proc. 1966 National Incinerator Conference. New York: ASME. 237-241, 1966	PC F,L
144	Schoenberger, R.J., Trieff, N.M., & Purdom, P.W., "Special techniques for analyzing solid waste or incinerated residue". Proc. 1966 National Incinerator Conference. New York: ASME. 242-248, 1966	PC L
145	Schoenberger, R.J., et al, "Characterization and treatment of incinerator process waters". Proc. 1970 National Incinerator Conference. New York: ASME. 204-215, 1960	PC F O
146	Schwartz, C.H., et al, "Development of a vortex incinerator with continuous feed". Proc. 1972 National Incinerator Conference. New York: ASME. 145-154, 1972	MI P O
147	Scott, J.C., "Ann Arbor's recalcining process and problems". JAWWA. 61:6, 285-288, 1969	PR,FB,DO F
148	Sebastian, F.P., Allen, T.D. & Laughlin, W.C., Jr., "Think thermal". Water and Wastes Engineering, 11:9, 47-50, 1974	MH,PC,DO F O
149	Sebastian, F.P. & Isheim, M.C., "Advances in incineration and resource reclamation". Proc. 1970 National Incinerator Conference. New York: ASME. 71-78, 1970	MH,PR F D,O,C
150	Shaw, J.T., "A commentary on the formation, incidence, measurement and control of nitrogen oxides in flue gas". Journal of the Institute of Fuel, 46:385, 170-178, 1973	PC,CT CO,L
151	Shell, G.L. & Burns, D.E., "Advanced wastewater treatment methods". Effluent and Water Treatment Journal, 13:4, 203-208, 1973	MI,SC,MH,PR RE
152	Shell, G.L., et al, "Regeneration of activated carbon". In Applications of New Concepts of Physical-Chemical Wastewater Treatment. Eckenfelder, W.W. & Cecil, L.K., Eds. New York: Pergammon Press. 167-178, 1972	MH,FB,PR RE,F C
153	Sherbeck, J.M., "The operation and maintenance of a multiple hearth type incinerator". In Sludge Concentration, Filtration, & Incineration, Continued Education Series No. 113, Univ. of Michigan School of Public Health, Ann Arbor. 177-183, 1963	DO,MH F D,O,C
154	Sherwood, R.J., "Package sludge combustion for industrial waste treatment plants". 23rd Industrial Waste Conference, Purdue University. Proceedings. Lafayette, Indiana. 1029-1038, 1968	FB P O

155	Shieh, W. & Essenhigh, R.H., "Combustion of computer cards in a continuous test incinerator: A comparison of theory and experiment". Proc. 1972 National Incinerator Conference. New York: ASME. 120-134, 1972	CT,PC M,P O
156	Slechta, A.F. & Culp, G.L., "Water reclamation studies at the South Tahoe Public Utility District". JWPCF, 39:5, 787-814, 1967	PR,PC,MI L O
157	Smith, C.E., "Principles and practice of granular carbon reactivation". In Applications of New Concepts of Physical-Chemical Wastewater Treatment. Eckenfelder, W.W. & Cecil, L.K., Eds. New York: Pergammon Press. 179-182, 1972	PR,MH,RK RE
158	Sohr, W.H., Ott, R., & Albertson, O.E., "Fluidized sewage sludge combustion". Water Works and Wastes Engineering, 2:9 90-94, 1965	FB,DO,PC F D
159	South Tahoe Public Utility District, California, "Advanced wastewater treatment as practices at South Tahoe". Washington: Environmental Protection Agency, Aug. 1971. (U.S. E.P.A. Water Pollution Control Research Series, 17010 ELQ 8/71). 436 p.	SC,MH,DO,PC, PR F,L D,O,C
160	Stephens, G.R., Hankin, L., & Glover, W.D., Jr., "Lead emissions from incinerated sewage sludge detected on tree foliage". Journal of Air Pollution Control Association, 22:10, 799-800, 1972	PC F,L
161	Sternitzke, R.F. & Dvirka, M., "Temperatures and air distributions in large rectangular incinerator furnaces". Proc. 1968 National Incinerator Conference. New York: ASME. 295-302, 1968	DO,PC CO,F D,O
162	Stribling, J.B., "Sludge incineration by cyclone furnace". Effluent & Water Treatment Journal, 12:8, 385-400, 1972	MI,DO F
163	Stribling, J.B., "The burning problem", Water and Waste Treatment, 15:5, 14-16, 1972	MI,SC RE
164	Stribling, J.B., "The cyclone furnace for waste incineration". Process Biochemistry, 8:1, 29-31, 34, 1973	MI,DO F
165	Stukenberg, J.R., "Biological-chemical wastewater treatment". JWPCF, 43:9. 1791-1806, 1971	SC,MI,PR P,M O
166	Stumbar, J.P., et al, "Combustion and emission phenomena in incinerators: Propagation velocity and flame spread through simulated fuel beds". Proc. 1970 National Incinerator Conference. New York: ASME. 288-303, 1970	CT M O

167	Sumner, J. & Price, D.H.A., "Combined incineration of refuse and sewage sludge". In Incineration of Refuse & Sludge. Helliwell, P.R., Ed. Southampton. Southampton University Press. 3.1-3.8, 1972	SC,MH,MI, RE
168	Sutherland, H.B., Finlay, T.W., & Cram, I.A., "Engineering and related properties of pulverised fuel ash". The Journal of the Institution of Highway Engineers, 15:6, 19-27, 1968	PC L,F
169	Takamatsu, T., Hashimoto, I., & Sioya, S., "Model identification of wet-air oxidation process thermal decomposition". Water Research, 4:1, 33-59, 1970	MI,CT M,L O
170	Tanner, R. & Vrenegoor, W., "Sludge and liquid wastes disposal for combined incineration systems". In Solid Waste Treatment and Disposal - 1971 Australian Waste Disposal Conference. Kirov, N.Y., Ed. 105-108, 1971	MI,SC F
171	Taylor, R. & Wain, J.G., "Sludge dewatering and incineration". Water Pollution Control, 66:5, 449-462, 1967	RK,FB,MH,SC RE,F C
172	Tench, H.B., "Operating experience with the Sheffield sludge incineration plant". In Incineration of Refuse & Sludge Helliwell, P.R., Ed. Southampton: Southampton University Press. 8.1-8.21, 1972	DO,MH F D,O,C
173	Tench, H.B., "Sludge filter pressing and incineration at Sheffield". Water Research, 6:4/5, 539-544, 1972	MH,SC,DO F D,O,C
174	Tench, H.B., Phillips, L.F., & Swanwick, K.H., "The Sheffield sludge incineration plant". Water Pollution Control 71:2, 176-185, 1972	MH,DO F D,O,C
175	Thistlethwayte, D.K.B., "Old and new techniques applied to residential and industrial sludges and refuse". In Solid Waste Treatment and Disposal - 1971 Australian Waste Disposal Conference. Kirov, N.Y., Ed. 167-174, 1971	MI,MH,FB,RK, SC RE
176	Thompson, C.G., Singley, J.E., & Black, A.P., "Magnesium carbonate - a recycled coagulant". JAWWA, 64:1, 11-19, 1972	PR P,L O
177	Thompson, C.G., Singley, J.E., & Black, A.P., "Magnesium carbonate: a recycled coagulant - II". JAWWA, 64:2, 93-99, 1972	PR P O,C
178	Thompson, R.N., Zajic, J.E., & Lichti, E., "Spectrographic analysis of air-dried sewage sludge". JWPCF, 36:6, 752-759, 1964	PC L,F O

179	Thompson, T.K., Lohse, G.E., & Wheeler, B.R., "Fluidized bed calcination of radioactive wastes using in-bed combustion heating". Nuclear Technology, 16:11, 396-405, 1972	FB,PC P
180	Thorne, D.J. & Watt, J.D., "Composition and pozzolanic properties of pulverized fuel ashes. I. Composition of fly ashes from some British power stations and properties of their component particles". Journal of Applied Chemistry, 15: Dec., 585-594, 1965	PC L,F
181	Thorne, D.J. & Watt, J.D., " Composition and pozzolanic properties of pulverized fuel ashes. II. Pozzolanic properties of fly ashes, as determined by crushing strength tests on lime mortars". Journal of Applied Chemistry, 15: Dec., 595-604, 1965	PC L,F
182	Unterberg, W., Sherwood, R.J., & Schneider, G.R., "Computerized design and cost estimation for multiple-hearth incinerators". Washington: Environmental Protection Agency, July, 1971. (U.S. E.P.A. Water Pollution Control Research Series, 17070 EBP 07/71). 166 p.	MH,DO,CT M,F D,O,C
183	Vickerson, G.L., "Fly ash control equipment for industrial incinerators". Proc. 1966 National Incinerator Conference. New York: ASME. 241-245, 1966	PC RE
184	Villiers, R.V., "A cursory look at the impact of phosphorus laden sludges on conversion processes". Paper read at Industrial Wastewater Conference, May, 1973. Toronto. Mimeographed.	SC,MH,FB,RK, MI RE,F O
185	Walker, A.B. & Schmitz, F.W., "Characteristics of furnace emissions from large, mechanically-stoked municipal incinerators". Proc. 1966 National Incinerator Conference. New York: ASME. 64-73, 1966	PC CO,F,L
186	Waters, R.F., Powell, H.E., & Cochran, A.A., "Recovery of phosphates and metals from waste phosphate sludge by reduction-sinter processes". Washington: U.S. Bureau of Mines, (Report of Investigations 7433); (NTIS Accession No. PB 201891) 1971, 10 p.	PR M,L
187	Weller, L.W. & Condon, W.R., "Problems in the design of sludge incinerating systems". 16th Annual Conference on Sanitary Engineering, University of Kansas. Transactions. Kansas. 15-24, 1966	DO,MH,SC,PC CO,F D
188	Wertz, C.F., "Miami lime recovery plant". JAWWA, 52:3, 326-332, 1960	RK,DO,PR F O

189	Wilson, D.A. & Brown, R.E., "Characterization of several incinerator process waters". Proc. 1970 National Incinerator Conference. New York: ASME. 196-203, 1970	PC F O
190	Wilson, D.L., "Prediction of heat of combustion of solid wastes from ultimate analysis". Environmental Science & Technology, 6:13, 1119-1121, 1972	CT M
191	Woodruff, P.H. & Larson, G.P., "Combustion profile of a grate-rotary kiln incinerator". Proc. 1968 National Incinerator Conference. New York: ASME. 327-336, 1968	DO,PC F D,O
192	Zajic, J.E., "Water pollution: disposal and reuse, part 2". New York: Marcel Dekker, Inc. 541-553, 1971	FB,MH,RK,MI F,M O
193	Zinn, R.E., "Process in municipal incineration through process engineering". Proc. 1968 National Incinerator Conference. New York: ASME. 259-266, 1968	DO RE D

ACKNOWLEDGEMENTS

The author wishes to acknowledge the assistance of the Canada Centre for Inland Waters' Library staff in tracing and obtaining many of the listed references. This research program is funded under provisions of the Canada-Ontario Agreement on Great Lakes Water Quality.

TD
770
.P58
S58
1976

Sludge incineration and
precipitant recovery : volume I,
a selective coded bibliography /
Plummer, Derek.
78875